



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO.               | CONFIRMATION NO. |
|-----------------|-------------|---|-----------------------------------|------------------|
| 09/943,352      | 08/31/2001  | Hiroyuki Karasawa   | Q65760                            | 8690             |
| 7590            | 10/20/2003  | SUGIIRUE, MION, ZINN, MACPEAK & SEAS, PLLC<br>2100 Pennsylvania Avenue, N.W.<br>Washington, DC 20037-3202 | EXAMINER<br>HANNAHER, CONSTANTINE |                  |
|                 |             |   | ART UNIT<br>2878                  | PAPER NUMBER     |

DATE MAILED: 10/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                  |                     |  |
|------------------------------|----------------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b>           | <b>Applicant(s)</b> |  |
|                              | 09/943,352                       | KARASAWA, HIROYUKI  |  |
|                              | Examiner<br>Constantine Hannaher | Art Unit<br>2878    |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 22 September 2003.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4,9-12,21,23 and 24 is/are rejected.
- 7) Claim(s) 5-8,13-20,22 and 25-28 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_ .
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>20010831</u> . | 6) <input type="checkbox"/> Other: _____ .                                   |

---

## DETAILED ACTION

### Claim Objections

1. Claim 23 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 4 requires one line sensor at one end face and a light reflecting surface at the other end face. It does not further limit claim 4 to refer to each of the two line sensors when the end face already requires a light reflecting surface.

### Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not describe an end face which simultaneously has a light reflecting surface and a line sensor.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 21, 24, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 21 recites the limitation “each of the two line sensors” in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 1 requires merely “a line sensor.”

Claim 24 recites the limitation “each of the two line sensors” in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 2 requires merely “a line sensor.”

Claim 23 recites the limitation “each of the two line sensors” in line 1. There is insufficient antecedent basis for this limitation in the claim. Claim 2 requires merely “a line sensor.”

### **Claim Rejections - 35 USC § 103**

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3/1, 4/1, 9, 11/9, and 12/9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi *et al.* (JP01101540A) in view of Yip *et al.* (US005039854A) and Kulpinski *et al.* (US004778995A) and Conrad *et al.* (US004778994A).

With respect to independent claim 1, Hosoi *et al.*, Yip *et al.*, Kulpinski *et al.*, and Conrad *et al.* are considered to suggest a radiation image read-out method in view of the corresponding elements as explained in the rejection of the apparatus below. Hosoi *et al.* linearly irradiates a sheet **10**, detects emitted light **15**, and moves sheet **10**, while Yip *et al.*, Kulpinski *et al.*, and Conrad *et al.* would have made it obvious to one of ordinary skill in the art at the time the invention was made to receive the emitted light **15** with one surface of a light guide device located at the recited location and guide the emitted light to a line sensor **17** arrayed along at least one end face of the light guide device.

With respect to dependent claim 3/1, Kulpinski *et al.* shows (Fig. 17) two sets of line sensors 26 and addition of the outputs of the photoelectric conversion devices (in element 60) is disclosed by Hosoi *et al.*

With respect to dependent claim 4/1, Kulpinski *et al.* shows (Fig. 16) the line sensor 26 located at one end face of the light guide device 24 and a face 70 formed as a light reflecting surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the end face opposite the single line sensor 26 suggested by Kulpinski *et al.* be formed as a light reflecting surface in view of the desire to not permit any collected emitted light to escape without detection, especially in view of the mirror coating 130 in Yip *et al.*

With respect to independent claim 9, Hosoi *et al.* discloses (Fig. 4) a radiation image read-out apparatus comprising (i) stimulating ray irradiating means 61 for linearly irradiating stimulating rays 63 onto an area of a stimulable phosphor sheet 10 causing the sheet to emit light 15, (iii) a line sensor 17 of the recited type, and (iv) sub-scanning means 11. The apparatus of Hosoi *et al.* does not include a light guide device, but a light guide device of the type recited is known from Yip *et al.* Yip *et al.* discloses a light guide device 132 (Fig. 8) located such that one surface stands facing the area of the stimulable phosphor sheet 118 exposed to the stimulating rays 116 and receives the emitted light and the received emitted light is converted into fluorescence and the fluorescence is guided toward the end faces of the light guide device (column 8, lines 36-52). Although Yip *et al.* discloses conversion of the emitted light into fluorescence, Conrad *et al.* shows that receiving emitted light and guiding it to an end face of a light guide device 34 is an art recognized equivalent to converting the emitted light to fluorescence and guiding the fluorescence to the end face (column 2, lines 56-61). Furthermore, Kulpinski *et al.* shows (Figs. 15-19) that a light guide device 24 in a radiation image read-out apparatus may have the line sensors 26 at any of a variety of end faces. In view of the high

efficiency of the fluorescent light guide device of Yip *et al.*, and the art-recognized equivalence of a transparent light guide as shown by Conrad *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hosoi *et al.* to have it comprise a light guide device between the stimulable phosphor sheet 10 and the line sensor 17 such that the line sensor 17 was arrayed along at least one end face of the light guide device in accordance with the suggestion of Kulpinski *et al.* that the end face at which the line sensor is arrayed may be parallel to the main scanning direction corresponding to the X direction in Hosoi *et al.*

With respect to dependent claim 11/9, Kulpinski *et al.* shows (Fig. 17) two sets of line sensors 26. An addition processing means 60 is disclosed by Hosoi *et al.*

With respect to dependent claim 12/9, Kulpinski *et al.* shows (Fig. 16) the line sensor 26 located at one end face of the light guide device 24 and a face 70 formed as a light reflecting surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the end face opposite the single line sensor 26 suggested by Kulpinski *et al.* be formed as a light reflecting surface in view of the desire to not permit any collected emitted light to escape without detection, especially in view of the mirror coating 130 in Yip *et al.*

8. Claims 2, 3/2, 4/2, 10, 11/10, and 12/10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoi *et al.* (JP01101540A) in view of Yip *et al.* (US005039854A) and Kulpinski *et al.* (US004778995A).

With respect to independent claim 2, Hosoi *et al.*, Yip *et al.*, and Kulpinski *et al.* are considered to suggest a radiation image read-out method in view of the corresponding elements as explained in the rejection of the apparatus below. Hosoi *et al.* linearly irradiates a sheet 10, detects emitted light 15, and moves sheet 10, while Yip *et al.* and Kulpinski *et al.* would have made it obvious to one of ordinary skill in the art at the time the invention was made to receive the emitted light 15

with one surface of a light guide device located at the recited location and convert the emitted light to fluorescence and guide the fluorescence to a line sensor **17** arrayed along at least one end face of the light guide device.

With respect to dependent claim 3/2, Kulpinski *et al.* shows (Fig. 17) two sets of line sensors **26** and addition of the outputs of the photoelectric conversion devices (in element **60**) is disclosed by Hosoi *et al.*

With respect to dependent claim 4/2, Kulpinski *et al.* shows (Fig. 16) the line sensor **26** located at one end face of the light guide device **24** and a face **70** formed as a light reflecting surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the end face opposite the single line sensor **26** suggested by Kulpinski *et al.* be formed as a light reflecting surface in view of the desire to not permit any collected emitted light to escape without detection, especially in view of the mirror coating **130** in Yip *et al.*

With respect to independent claim 10, Hosoi *et al.* discloses (Fig. 4) a radiation image read-out apparatus comprising (i) stimulating ray irradiating means **61** for linearly irradiating stimulating rays **63** onto an area of a stimulable phosphor sheet **10** causing the sheet to emit light **15**, (iii) a line sensor **17** of the recited type, and (iv) sub-scanning means **11**. The apparatus of Hosoi *et al.* does not include a light guide device, but a light guide device of the type recited is known from Yip *et al.* Yip *et al.* discloses a light guide device **132** (Fig. 8) located such that one surface stands facing the area of the stimulable phosphor sheet **118** exposed to the stimulating rays **116** and receives the emitted light and the received emitted light is converted into fluorescence and the fluorescence is guided toward the end faces of the light guide device (column 8, lines 36-52). Furthermore, Kulpinski *et al.* shows (Figs. 15-19) that a light guide device **24** in a radiation image read-out apparatus may have the line sensors **26** at any of a variety of end faces. In view of the high efficiency

of the fluorescent light guide device of Yip *et al.*, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hosoi *et al.* to have it comprise a light guide device between the stimulable phosphor sheet 10 and the line sensor 17 such that the line sensor 17 was arrayed along at least one end face of the fluorescent light guide device in accordance with the suggestion of Kulpinski *et al.* that the end face at which the line sensor is arrayed may be parallel to the main scanning direction corresponding to the X direction in Hosoi *et al.*

With respect to dependent claim 11/10, Kulpinski *et al.* shows (Fig. 17) two sets of line sensors 26. An addition processing means 60 is disclosed by Hosoi *et al.*

With respect to dependent claim 12/10, Kulpinski *et al.* shows (Fig. 16) the line sensor 16 located at one end face of the light guide device 24 and a face 70 formed as a light reflecting surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made that the end face opposite the single line sensor 26 suggested by Kulpinski *et al.* be formed as a light reflecting surface in view of the desire to not permit any collected emitted light to escape without detection, especially in view of the mirror coating 130 in Yip *et al.*

### **Response to Submission(s)**

9. Applicant's arguments filed September 22, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the light sensor parallel to the main scanning direction) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The stimulation in Hosoi is plainly along a line in direction **X** hence "linearly" as claimed. No requirement for simultaneity of irradiation is seen in the claims.

For at least the reasons explained above, Applicant is not entitled to a favorable determination of patentability in view of the arguments submitted September 22, 2003.

### **Allowable Subject Matter**

10. Claims 5-8, 13-20, 22, and 25-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 21 and 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: division of the light guide device, detection from subareas, and the disposition of the end faces is not suggested.

### **Conclusion**

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

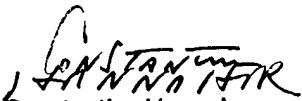
calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Constantine Hannaher whose telephone number is (703) 308-4850. The examiner can normally be reached on Monday-Friday with flexible hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (703) 308-4852. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ch

  
Constantine Hannaher  
Primary Examiner